

both safety analyzers. In this case, the relevant safety analyzers can also carry out different safety-related logic links in addition to the redundant logic links, that is to say those which are carried out on both analyzers.

5 The invention will be explained in the following text by describing a number of embodiments based on the drawings, in which:

- 10 Fig. 1 shows an outline illustration of a first embodiment of the automation system according to the invention, with two safety analyzers in the long-distance bus system,
- Fig. 2 shows an outline sketch of a further embodiment of the invention, with a safety analyzer being arranged directly after the interface assembly,
- 15 Fig. 3 shows the automation system according to the invention in the form of an outline sketch with a safety analyzer integrated in the interface assembly, and with a second safety analyzer at the head of a bus spur,
- 20 Fig. 4 shows an automation system according to the invention with two safety analyzers whose outputs are connected to one another,
- Fig. 5 shows an outline block diagram illustration of a safety analyzer with various inputs and outputs, and
- 25 Figs. 6a and 6b show an outline illustration of data manipulation on the bus datastream by means of the safety analyzer.

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30 Fig. 1 shows an outline illustration of the automation system 1 according to the invention, that is to say a control and data transmission system according to the invention. This has a bus 2 to which I/O bus subscribers with associated sensors and